

Title (en)

THERMAL MANAGEMENT UNIT, THERMAL MANAGEMENT SYSTEM, AND AN ELECTRICAL VEHICLE INCLUDING THE THERMAL MANAGEMENT SYSTEM

Title (de)

THERMISCHE VERWALTUNGSEINHEIT, THERMISCHES VERWALTUNGSSYSTEM UND ELEKTRISCHES FAHRZEUG MIT DEM THERMISCHEN VERWALTUNGSSYSTEM

Title (fr)

UNITÉ DE GESTION THERMIQUE, SYSTÈME DE GESTION THERMIQUE ET VÉHICULE ÉLECTRIQUE COMPRENANT LE SYSTÈME DE GESTION THERMIQUE

Publication

**EP 3984791 A1 20220420 (EN)**

Application

**EP 20202112 A 20201015**

Priority

EP 20202112 A 20201015

Abstract (en)

The present disclosure relates to a thermal management unit (1) for controlling the temperature in an electric vehicle, a thermal management system comprising the unit (1) and an electric vehicle comprising the thermal management system. The unit comprises a heater (6), a cooling unit (10), a heat exchanger (5), six input ports (i1-i6) and six output ports (o1-o6) for connecting external pipes, three three-way valves (7, 11, 12), a two-way valve (13) and piping (14) for thermal fluid. The components of the thermal management unit (1) are connected via piping (14) such that excess heat from a vehicle component (4) can be directed to heat the cabin (2) and/or energy storage system (3) of the electric vehicle. Also, one heater (6) and one cooling unit (10) are used to heat or cool both the cabin (2) and the energy storage system (3).

IPC 8 full level

**B60H 1/00** (2006.01)

CPC (source: EP US)

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Citation (applicant)

US 7789176 B2 20100907 - ZHOU PENG [US]

Citation (search report)

- [A] DE 19625927 A1 19980102 - WEBASTO KLIMATECH GMBH [DE]
- [A] US 2016107502 A1 20160421 - JOHNSTON VINCENT GEORGE [US]
- [A] GB 2558914 A 20180725 - ARRIVAL LTD [GB]

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 3984791 A1 20220420**; **EP 3984791 B1 20230726**; **EP 3984791 C0 20230726**; ES 2957763 T3 20240125; HR P20231008 T1 20231208; PL 3984791 T3 20231009; US 11597251 B2 20230307; US 2022118816 A1 20220421

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